

is the nadir of these 3 houses the beginning of the 3 houses that follow. And for the more declaration, lo here thy figure.

38. To finde the lyne meridional to dwelle in any certein place.

(Ad inveniendum lineam meridianam per subtiles operationes.)

IF a rond plate of metal; for warping, the brodere the better; & make therupon a just compas, a lite within the bordure; and ley this ronde plate upon an evne grond, or on an evne ston, or on an evne stok fix in the gronde; and ley it even by a level. And in centre of the compas stike an evne pin or a wyr upright; the smallere the better. Set thy pin by a plom/rewle evne upright; & let this pin be no lengere than a quarter of the diametre of thy compas, fro the centre. And waite bisily, aboute 10 or 11 of the klokke and whan the sonne shyneth, whan the shadwe of the pin entreth anything within the cercle of thy plate an heer/mele, and mark ther a prikke with inke. Abyde thanne stille waiting on the sonne after 1 of the klokke, til that the schadwe of the wyr or of the pin passe onything out of the cercle of the compas, be it never so lyte; and set ther another prikke of inke. Take than a compas, and mesure evne the middel bytwix bothe prikkes; and set ther a prikke. Take thanne a rewle, and draw a stryke, evne a lyne fro the pin unto the middel prikke; & tak ther thy lyne meridional for evermo, as in that same place. And yif thou drawe a cros/lyne over thwart the compas, justly over the lyne meridional, than hastow est and west and south; and, par consequence, than the nadir of the south lyne is the north lyne. And for more declaration, lo here thy figure.

39. Description of the meridional lyne, of longitudes, and latitudes of citees and townes from on to another of clymatz.

THIS lyne meridional is but a maner description of lyne imagined, that passeth up/ on the poles of this world & by the senith of oure heved. And hit is yelected the lyne meridional; for in what place that any man/er man is at any tyme of the yeer, whan that the sonne by moeving of the firmament cometh to his verrey meridian place, than is hit verrey midday, that we clepen oure noon, as to thilke man; and therefore is it cleped the lyne of midday. And nota, for evermo, of 2 citees or of 2 townes, of whiche that o toun aprocheth more toward the est than doth that other toun, truste wel that thilke townes han diverse meridians. Nota also, that the arch of the equinoxial, that

is conteyned or bounded bytwix the 2 meridians, is cleped the longitude of the toun. And yif so be that two townes have ylyke meridian, or oon meridian, than is the distance of hem bothe ylyke fro the est; and the contrarie. And in this manere they chaunge nat her meridian, but sothly they chaungen her almikanteras; for the encompassing of the pool and the distance of the sonne. The longitude of a clymat is a lyne imagined fro est to west, ylyke distant bytwene them alle. The latitude of a clymat is a lyne imagined from north to south the space of the erthe, fro the beginning of the firste clymat unto the verrey ende of the same climat, evne direct agayns the pole artik. Thus seyn some cloutours; and somme of hem seyn that yif men clepen the latitude, thaimene the arch bytwix the senith & the equinoxial. Thanne sey they that the distance fro the equinoxial unto the ende of a climat, evne agayns the pole artyk, is the latitude of a climat for sothe. And for more declaration, lo here thy figure.

40. To knowe with which degree of the zodiak that any planete assendith on the orisonte, whether so that his latitude be north or south.

NOWE by thyn almenak the degree of the ecliptik of any signe in which that the planete is reckned for to be, and that is cleped the degree of his longitude; and knowe also the degree of his latitude fro the ecliptik, north or south. And by these samples followinge in special, maystow wirke for sothe in every signe of the zodiak. The degree of the longitude, par aventure, of Venus or of another planete, was 6 of Capricorne; & the latitude of him was northward 2 degrees fro the ecliptik lyne. I tok a subtil compas, and cleped that oon poynt of my compas A, and that other poynt f. Than tok I the point of A, and set it in the ecliptik lyne evne in my zodiak, in the degree of the longitude of Venus, that is to seyn, in the 6 degree of Capricorne; and thanne sette I the point of f upward in the same signe, bycause that the latitude was north, upon the latitude of Venus, that is to seyn, in the 6 degree fro the heved of Capricorne; and thus have I 2 degrees bytwix my two prikkes. Than leide I down softly my compas, and sette the degree of the longitude upon the orisonte; tho tok I & wexed my label in maner of a peyre tables to receyve distinctly the prikkes of my compas. Tho tok I this forseide label, and leide it fix over the degree of my longitude; tho tok I up my compas, and sette the point of

in the wex on my label, as evne as I coude gesse over the ecliptik lyne, in the ende of the longitude; & sette the point of f endlang in my label upon the space of the latitude, inward and over the zodiak, that is to seyn, northward fro the ecliptik. Than tok I down my compas, and loke wel in the wey upon the prikke of A and of f; tho turned I my riet til that the prikke of f sat upon the orisonte; than saw I wel that the body of Venus, in hir latitude of 2 degrees septentrionalis, assended, in the ende of the 6 degree, in the heved of Capricorne. And nota, that in the same maner maystow wirke with any latitude septentrionalis alle signes; but sothly the latitude meridional of a planete in Capricorne may not be take, bycause of the litel space bytwix the ecliptik and the bordure of the Astrolabe; but sothly, in alle other signes it may. Also the degree, par aventure, of Juppiter or of another planete, was in the first degree of Pisces in longitude, and his latitude was 3 degrees meridional; tho tok I the point of A, and sette it in the firste degree of Pisces on the ecliptik, and thanne sette I the point of f downward in the same signe, bycause that the latitude was south 3 degrees, that is to seyn, fro the heved of Pisces; and thus have I 3 degrees bytwix bothe prikkes; thanne sette I the degree of the longitude upon the orisonte. Tho tok I my label, and leide it fix upon the degree of the longitude; tho sette I the point of A on my label, evne over the ecliptik lyne, in the ende evne of the degree of the longitude, & sette the point of f endlang in my label the space of 3 degrees of the latitude fro the zodiak, this is to seyn, southward fro the ecliptik, toward the bordure; and turned my riet til the prikke of f sat upon the orisonte; thanne saw I wel that the body of Juppiter, in his latitude of 3 degrees meridional, ascended with 14 degrees of Pisces in horoscopo. And in this maner maystow wirke with any latitude meridional, as I first seide, save in Capricorne. And yif thou wolt pleye this craft with the arysing of the mone, loke thou rekne wel hir cours houre by houre; for she ne dwelleth nat in a degree of hir longitude but a litel while, as thou wel knowest; but natheles, yif thou rekne hir verrey moeving by thy tables houre after houre, thou shalt do wel ynow.

Explicit tractatus de Conclusionibus Astrolabii, compilatus per Galfridum Chaudier ad filium suum Lodewicum, scolarem tunc temporis Oxonie, ac sub tutela illius nobilissimi philosophi Magistri N. Strode, etc.

Supplementary Propositions.

41. Umbra Recta.

IF IT SO BE that thou wilt werke by umbra recta, and thou may come to the bas of the toure, in this maner thou schalt werke. Tak the altitude of the tour by bothe holes, so that thy rewle ligge even in a poynt. Ensample as thus: I see him thorw at the poynt of 4; then mete I the space between me and the tour, and I finde it 20 feet; than beholde I how 4 is to 12, right so is the space between thee & the tour to the altitude of the tour. For 4 is the thridde part of 12, so is the space between thee & the tour the thridde part of the altitude of the tour; than thryes 20 feet is the heyghte of the tour, with adding of thyn owne persone to thyn eye. And this rewle is so general in umbra recta, fro the poynt of oon to 12. And yif thy rewle falle upon 5, than is 5 12 parties of the heyghte the space between thee and the toure; with adding of thyn owne heygth.

42. Umbra Versa.

ANOTHER maner of workinge, by umbra versa. Yif so be that thou may nat come to the bas of the tour, I see him thorw the nombre of 1; I sette ther a prikke at my fote; than go I neer to the tour, and I see him thorw at the poynt of 2, and there I sette another prikke; and I beholde how 1 hath him to 12, and ther finde I that it hath him twelfe sythes; than beholde I how 2 hath him to 12, and thou shalt finde it sexe sythes; than thou shalt finde that as 12 above 6 is the nombre of 6, right so is the space between thy two prikkes the space of 6 tymes thyn altitude. And note, that at the ferste altitude of 1, thou settest a prikke; and afterward, whan thou seest him at 2, ther thou settest another prikke; than thou findest between two prikkys 60 feet; than thou shalt finde that 10 is the 6 party of 60. And then is 10 feet the altitude of the tour, for other poyntis, yif it fille in umbra versa, as thus: I sette caas it fill upon 2, & at the secunde upon 3; than schalt thou finde that 2 is 6 parties of 12; & 3 is 4 parties of 12; than passeth 6 4, by nombre of 2; so is the space between two prikkes twyes the heyghte of the tour. And yif the differens were thryes, than shulde it be three tymes; and thus mayst thou werke fro 2 to 12; and yif it be 4, 4 tymes; or 5, 5 tymes; et sic de ceteris.